

# *Project Baseline Summary Report*

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-FA04 / H Canyon Deactivation Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0501**

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## **General Project Information**

### **Project Description Narratives**

#### **Purpose, Scope, and Technical Approach:**

Definition of Scope: Detailed deactivation plans for the H Canyon facility do not currently exist; deactivation planning is currently scheduled to begin in FY04 and is included in this PBS. Execution of a phased deactivation program is to begin in FY05 and is scheduled to end in FY09.

Upon completion of the Nuclear Material Stabilization Program, these facilities are envisioned to be surplus highly contaminated [hazard class 2] nuclear facilities. The primary objective of the multi-year deactivation program is to reduce the risks associated with these nuclear facilities and lower long-term surveillance and maintenance (S&M) costs per DOE Order 430.1A and the Implementation Guides. The goal for deactivation of the surplus facilities is to achieve a passive state for long term S&M; facilities will be accessed controlled with periodic entry for inspection and monitoring. The periodic maintenance of the building structures and key safety systems (ventilation/monitoring) are expected to be the only routine activities required. It is anticipated that the facility will be maintained in this condition for up to a 30-year period while awaiting final decisions on facility disposition.

The deactivation program would include the following key elements: 1. Flush all process systems, tanks, and piping and specialized equipment to minimize holdup. 2. Complete radiological surveys, chemical inventories, and identify other hazardous conditions. 3. De-inventory the facility of all chemical and other hazardous materials. 4. De-energize and isolate all non-essential building and process systems. 5. Institute a facilities support standby program to ensure basic services are maintained. 6. Complete facility isolation and initiate S&M program utilizing revised safety documentation to protect worker safety and health as well as the environment.

Technical Approach: Efficiencies and Lessons Learned from previous and current deactivation projects across the DOE Complex will be incorporated into deactivation plans. The project will be managed per the DOE-EM 60 Deactivation Guidance; phase 1 Project Requirements Determination, Phase 2 Project Execution Plan Development and Phase 3 Project Execution. The characterization of existing surplus facilities and development of end state criteria is a critical to the success of the deactivation project. Application of latest technology developments in the characterization and analysis of residual radiological and industrial hazards and cost-benefit engineering evaluations are key components in developing a cost effective deactivation plan and will be developed as funding is available prior to completion of nuclear material stabilization phase for each facility.

#### **Project Status in FY 2006:**

The H Canyon and ancillary facilities will complete the chemical processing of identified at-risk materials prior to FY06. A phased deactivation program is scheduled to begin FY05; completion of the deactivation program for H Canyon is scheduled for FY09. Stabilization activities will be conducted utilizing the current operating staff, supplemented by a core group of deactivation experts. This will ensure institutional knowledge is retained and utilized through completion of the deactivation project.

#### **Post-2006 Project Scope:**

The phased deactivation of H Canyon will be completed in FY09; completion of the H Canyon deactivation project is dependent upon no additional missions being identified for H Canyon. Upon completion of the H Canyon deactivation project, routine surveillances will be established to verify the structural integrity and operability of equipment required to manage residual risks as defined in the surveillance and maintenance plan. This routine

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## **Project Description Narratives**

monitoring will continue until the final disposition of the facilities. The S&M monitoring scope and costs are captured in the H Area Long Term Monitoring PBS (SR-FA-17).

### **End State**

This project provides for the deactivation of H-Canyon and ancillary facilities only. Additional projects will be required to complete future decommissioning and /or meet the EM site end-state; the H-Canyon facilities end states have not been defined. No plans have been made at this time to reuse H-Canyon facilities after deactivation.

No nuclear materials, spent fuel, or high level waste are planned for storage in H-Canyon facilities. TRU and low level solid and liquid waste will be generated during deactivation activities. These wastes will be disposed via other solid waste treatment facilities at SRS. Life cycle waste costs are reflected in the operating costs of those facilities.

### **Cost Baseline:**

Costs identified in this PBS are rough order of magnitude engineering estimates based upon the lessons learned from the Hanford PUREX Deactivation project. Work scope identified in this PBS is based on process and facility history only, not from detailed characterization of facility hazards. Such characterization efforts will be used to refine the scope and cost, as additional project definition becomes available.

This estimate should be used for pre-conceptual planning, and should be considered as preliminary funding guidance only. Detailed work scopes and cost estimates will be developed as part of the Deactivation Plan development and will be a product of that work when funded.

This project estimate includes only direct project deactivation activity costs. The facility baseline S&M costs must be added to the deactivation cost to obtain the overall life cycle costs.

### **Hazards**

The deactivation-planning project will be funded in FY04. To-date a deactivation specific safety and hazard analysis has not been performed. Such analyses will be performed in accordance with Site standards. The criteria for determining the radiological hazard categories are provided in DOE-STD-1027-92, and the criteria for determining the chemical hazard categorization are provided in WSRC-MS-92-206. Until modified by deactivation activities, the operational safety basis will be maintained as the controlling ASA.

### **Work Performance:**

Activities and checkpoints are described by the Integrated Management System Description. The conditions and requirements are clearly established and agreed upon prior to the starting of any project and those requirements are contractually binding upon WSRC. The key elements of the WSRC Integrated Safety Program are to define the scope of work, identify and analyze hazards associated with the work, develop and implement hazard controls, perform work within controls, and provide feedback on adequacy of controls and continue to improve safety management. The WSRC Integrated Procedures Management System is the primary mechanism for implementing the objective, principles and functions of the Safety Management System. This system establishes Company-Level, Division-level, and Program-specific procedures consistent with organizational roles, and ensures a consistent, discipline site-wide approach to safety while performing work. A documented safety basis will be maintained through completion of the deactivation project.

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## **Project Description Narratives**

### **Project End State**

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No nuclear materials, spent fuel, or high level waste are planned for storage in H-Canyon facilities. TRU and low level solid and liquid waste will be generated during deactivation activities. These wastes will be disposed via other solid waste treatment facilities at SRS. Life cycle waste costs are reflected in the operating costs of those facilities.

### **Cost Baseline Comments:**

Costs identified in this PBS are rough order of magnitude engineering estimates based upon the lessons learned from the Hanford PUREX Deactivation project. Work scope identified in this PBS is based on process and facility history only, not from detailed characterization of facility hazards. Such characterization efforts will be used to refine the scope and cost, as additional project definition becomes available.

This estimate should be used for pre-conceptual planning, and should be considered as preliminary funding guidance only. Detailed work scopes and cost estimates will be developed as part of the Deactivation Plan development and will be a product of that work when funded.

This project estimate includes only direct project deactivation activity costs. The facility baseline S&M costs must be added to the deactivation cost to obtain the overall life cycle costs.

### **Safety & Health Hazards:**

The deactivation-planning project will be funded in FY04. To-date a deactivation specific safety and hazard analysis has not been performed. Such analyses will be performed in accordance with Site standards. The criteria for determining the radiological hazard categories are provided in DOE-STD-1027-92, and the criteria for determining the chemical hazard categorization are provided in WSRC-MS-92-206. Until modified by deactivation activities, the operational safety basis will be maintained as the controlling ASA.

### **Safety & Health Work Performance:**

Activities and checkpoints are described by the Integrated Management System Description. The conditions and requirements are clearly established and agreed upon prior to the starting of any project and those requirements are contractually binding upon WSRC. The key elements of the WSRC Integrated Safety Program are to define the scope of work, identify and analyze hazards associated with the work, develop and implement hazard controls, perform work within controls, and provide feedback on adequacy of controls and continue to improve safety management. The WSRC Integrated Procedures Management System is the primary mechanism for implementing the objective, principles and functions of the Safety Management System. This system establishes Company-Level, Division-level, and Program-specific procedures consistent with organizational roles, and ensures a consistent, discipline site-wide approach to safety while performing work. A documented safety basis will be maintained through completion of the deactivation project.

### **PBS Comments:**

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## Project Description Narratives

The fundamental concept of deactivation is to reduce risks associated with surplus facilities, thereby reducing the S&M cost while maintaining safety for site employees, the public and the environment. The methodology is to use all technology available to de-inventory, stabilize residual hazardous materials to the lowest manageable hazard level possible, shutdown of unnecessary systems and reduction of discretionary S&M. Upon completion of deactivation, the facility would be locked with only periodic entry for inspection and monitoring, while awaiting a turnover to EM for a final decision on disposition (D&D, entombment, ...).

### Baseline Validation Narrative:

Not Applicable.

## General PBS Information

Project Validated?

Date Validated:

Has Headquarters reviewed and approved project?

No

Date Project was Added: 12/1/1997

Baseline Submission Date: 7/3/1999

FEDPLAN Project? Yes

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	Y	Y	Y	N	N	Y	Y	Y

## Project Identification Information

DOE Project Manager: G. M. Nichols, Jr.

DOE Project Manager Phone Number: 803-952-2021

DOE Project Manager Fax Number: 803-952-2019

DOE Project Manager e-mail address: gnichols@srs.gov

Is this a High Visibility Project (Y/N):

## Planning Section

### Baseline Costs (in thousands of dollars)

1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
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PBS Baseline (current year dollars)	40,500	46,800	87,300							0	0	0	0	1,600	9,300	29,600
PBS Baseline (constant 1999 dollars)	33,304	36,627	69,931							0	0	0	0	1,376	7,789	24,139
PBS EM Baseline (current year dollars)	40,500	46,800	87,300							0	0	0	0	1,600	9,300	29,600
PBS EM Baseline (constant 1999 dollars)	33,304	36,627	69,931							0	0	0	0	1,376	7,789	24,139
	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011-2015</b>	<b>2016-2020</b>	<b>2021-2025</b>	<b>2026-2030</b>	<b>2031-2035</b>	<b>2036-2040</b>	<b>2041-2045</b>	<b>2046-2050</b>	<b>2051-2055</b>	<b>2056-2060</b>	<b>2061-2065</b>	<b>2066-2070</b>
PBS Baseline (current year dollars)	25,200	17,400	4,200	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	20,011	13,454	3,162	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	25,200	17,400	4,200	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	20,011	13,454	3,162	0	0	0	0	0	0	0	0	0	0	0	0	0

## Baseline Escalation Rates

<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
			3.60%	3.60%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%
<b>2010</b>	<b>2011-2015</b>	<b>2016-2020</b>	<b>2021-2025</b>	<b>2026-2030</b>	<b>2031-2035</b>	<b>2036-2040</b>	<b>2041-2045</b>	<b>2046-2050</b>	<b>2051-2055</b>	<b>2056-2060</b>	<b>2061-2065</b>	<b>2066-2070</b>
2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%

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## Project Reconciliation

### Project Completion Date Changes:

Previously Projected End Date of Project: 9/1/2012

Current Projected End Date of Project: 9/1/2009

Explanation of Project Completion Date Difference (if applicable):

## Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	58,859	Actual 1997 Cost:	Actual 1998 Cost:
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	58,859	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):	1,589
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	60,448		

## Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):	9,482	Estimate revised.
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	69,930	
Additional Amount to Reconcile (+):	1	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	69,931	

## Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Project Mission Complete	SR-FA04-002		9/1/2009								

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## Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Project Start	SR-FA04-001		10/1/2004								

## Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Project Mission Complete	SR-FA04-002				Y						
Project Start	SR-FA04-001			Y							

## Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
Tech.														
Deployed	Ntd	18.00	0.00	18.00										
Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035	Planned 2036 - 2040
Tech.														
Deployed	Ntd		18.00											
Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total				
Tech.														
Deployed	Ntd									18.00				

## Technology Needs

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## Technology Needs

**Site Need Code:** SR99-4001

**Site Need Name:** Dismantlement of Large and/or Complex Equipment and Structures

**Focus Area Work Package ID:** DD-10

**Focus Area Work Package:** Production Reactor D&D

**Focus Area:** DDFA

**Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Laser Cutting and Size Reduction

Laser Cutting and Size Reduction

Laser Cutting and Size Reduction

Dual Arm Work Platform Teleoperated Robotics System

Dual Arm Work Platform Teleoperated Robotics System

Dual Arm Work Platform Teleoperated Robotics System

Mobile Robot Worksystem (ROSIE)

Mobile Robot Worksystem (ROSIE)

Mobile Robot Worksystem (ROSIE)

High Speed Clamshell Pipe Cutter

High Speed Clamshell Pipe Cutter

High Speed Clamshell Pipe Cutter

Swing-Reduced Crane Control

Swing-Reduced Crane Control

Swing-Reduced Crane Control

Oxy-Gasoline Torch

Oxy-Gasoline Torch

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## **Technology Needs**

Oxy-Gasoline Torch

Self Contained Pipe Cutting Shear

Self Contained Pipe Cutting Shear

Self Contained Pipe Cutting Shear

Remote Control Concrete Demolition System

Remote Control Concrete Demolition System

Remote Control Concrete Demolition System

Concrete Spaller

Concrete Spaller

Concrete Spaller

Track Mounted Shear/Crusher

Track Mounted Shear/Crusher

Track Mounted Shear/Crusher

## **Related CCP Milestones**

## **Related Waste Streams**

## **Agree?**

## **Change?**

00576: TAN - TRU Waste Segregated and Repackaged for WIPP Disposal

Y

N

00522: LAC - Low Activity Bulk Waste

Y

N

00528: LAE - Incinerable Low Activity Job Control Waste

Y

N

00574: TAL - TRU Waste Segregated and Repackaged for WIPP Disposal

Y

N

00531: LAG - Contaminated Large Equip for Survey/Decon

Y

N

00530: LAF - Bulk Metal for Survey/Decon

Y

N

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## Technology Needs

**Site Need Code:** SR99-4002

**Site Need Name:** Characterization of Contaminated Surfaces

**Focus Area Work Package ID:** DD-03

**Focus Area Work Package:** Canyon Disposition Initiative

**Focus Area:** DDFA

**Agree with Technology Link:** N

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Rapid Surface Sampling and Archive Record (RSSAR) System

Rapid Surface Sampling and Archive Record (RSSAR) System

Rapid Surface Sampling and Archive Record (RSSAR) System

Rapid Surface Sampling and Archive Record (RSSAR) System

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray Fluorescence Spectrometer

Portable X-Ray Fluorescence Spectrometer

Portable X-Ray Fluorescence Spectrometer

Portable X-Ray Fluorescence Spectrometer

Gamma Ray Imaging System

Gamma Ray Imaging System

Gamma Ray Imaging System

Gamma Ray Imaging System

Mobile Automated Characterization System

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## **Technology Needs**

Mobile Automated Characterization System

Mobile Automated Characterization System

Mobile Automated Characterization System

Gamma Cam (TM) Radiation Imaging System

Gamma Cam (TM) Radiation Imaging System

Gamma Cam (TM) Radiation Imaging System

Gamma Cam (TM) Radiation Imaging System

Field Transportable Beta Spectrometer

Field Transportable Beta Spectrometer

Field Transportable Beta Spectrometer

Field Transportable Beta Spectrometer

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Ground Based Laser Induced Fluorescence Imaging

Ground Based Laser Induced Fluorescence Imaging

Ground Based Laser Induced Fluorescence Imaging

Ground Based Laser Induced Fluorescence Imaging

In Situ Object Counting System

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## Technology Needs

In Situ Object Counting System

In Situ Object Counting System

In Situ Object Counting System

**Site Need Code:** SR99-4003

**Site Need Name:** Material Recycle (Process Equipment, Metal, Steel, and Concrete)

**Focus Area Work Package ID:** DD-05

**Focus Area Work Package:** Material Recycle and Release

**Focus Area:** DDFA

**Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Stainless Steel Beneficial Reuse

Stainless Steel Beneficial Reuse

Stainless Steel Beneficial Reuse

Stainless Steel Beneficial Reuse

Laser Decontamination and Recycle of Metals

Laser Decontamination and Recycle of Metals

Laser Decontamination and Recycle of Metals

Laser Decontamination and Recycle of Metals

Biodegradation of Concrete

Biodegradation of Concrete

Biodegradation of Concrete

Biodegradation of Concrete

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

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## Technology Needs

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

SEG Recycle and Reuse of Radioactively Contaminated Scrap Metal

SEG Recycle and Reuse of Radioactively Contaminated Scrap Metal

SEG Recycle and Reuse of Radioactively Contaminated Scrap Metal

SEG Recycle and Reuse of Radioactively Contaminated Scrap Metal

Steam Vacuum Cleaning

Steam Vacuum Cleaning

Steam Vacuum Cleaning

Steam Vacuum Cleaning

Centrifugal Shot Blast System

Centrifugal Shot Blast System

Centrifugal Shot Blast System

Centrifugal Shot Blast System

Soft Media Blast Cleaning

Soft Media Blast Cleaning

Soft Media Blast Cleaning

Soft Media Blast Cleaning

### Related CCP Milestones

### Related Waste Streams

### Agree?

### Change?

00522: LAC - Low Activity Bulk Waste

Y

N

02184: AA - LLW Soil, Rubble, Debris

Y

N

00528: LAE - Incinerable Low Activity Job Control Waste

Y

N

00574: TAL - TRU Waste Segregated and Repackaged for WIPP Disposal

Y

N

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## Technology Needs

**Site Need Code:** SR99-4004

**Site Need Name:** Decontamination of Contaminated Concrete

**Focus Area Work Package ID:** DD-11

**Focus Area Work Package:** Deactivation of 321-M Fuel Fabrication Facility

**Focus Area:** DDFA

**Agree with Technology Link:** N

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Laser Surface Cleaning

Laser Surface Cleaning

Laser Surface Cleaning

Laser Surface Cleaning

Laser Surface Cleaning

Biodegradation of Concrete

Biodegradation of Concrete

Biodegradation of Concrete

Biodegradation of Concrete

Biodegradation of Concrete

2-D Linear Motion System

2-D Linear Motion System

2-D Linear Motion System

2-D Linear Motion System

2-D Linear Motion System

Rotary Peening with Captive Shot

Rotary Peening with Captive Shot

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## **Technology Needs**

Rotary Peening with Captive Shot

Rotary Peening with Captive Shot

Rotary Peening with Captive Shot

Centrifugal Shot Blast System

Centrifugal Shot Blast System

Centrifugal Shot Blast System

Centrifugal Shot Blast System

Centrifugal Shot Blast System

Soft Media Blast Cleaning

Soft Media Blast Cleaning

Soft Media Blast Cleaning

Soft Media Blast Cleaning

Soft Media Blast Cleaning

ROTO PEEN Scaler and VAC PAC System

ROTO PEEN Scaler and VAC PAC System

ROTO PEEN Scaler and VAC PAC System

ROTO PEEN Scaler and VAC PAC System

ROTO PEEN Scaler and VAC PAC System

Concrete Shaver

Concrete Shaver

Concrete Shaver

Concrete Shaver

Concrete Shaver

Remotely Operated Scabbling

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## Technology Needs

Remotely Operated Scabbling

Remotely Operated Scabbling

Remotely Operated Scabbling

Remotely Operated Scabbling

Concrete Grinder

Concrete Grinder

Concrete Grinder

Concrete Grinder

Concrete Grinder

Concrete Spaller

Concrete Spaller

Concrete Spaller

Concrete Spaller

Concrete Spaller

### Related CCP Milestones

### Related Waste Streams

### Agree?

### Change?

00522: LAC - Low Activity Bulk Waste

Y

N

00528: LAE - Incinerable Low Activity Job Control Waste

Y

N

Site Need Code: **SR99-4005**

Site Need Name: **Characterization of Inaccessible Areas**

Focus Area Work Package ID: **DD-11**

Focus Area Work Package: **Deactivation of 321-M Fuel Fabrication Facility**

Focus Area: **DDFA**

Agree with Technology Link: **N**

Benefits (Cost, Risk Reduction, Both): **Cost**

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

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## **Technology Needs**

Internal Duct Characterization System

Internal Duct Characterization System

Internal Duct Characterization System

Internal Duct Characterization System

Small Pipe Characterization System (SPCS)

Small Pipe Characterization System (SPCS)

Small Pipe Characterization System (SPCS)

Small Pipe Characterization System (SPCS)

Pipe Explorer (TM) System

Pipe Explorer (TM) System

Pipe Explorer (TM) System

Pipe Explorer (TM) System

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Associated Particle Imaging Development

Associated Particle Imaging Development

Associated Particle Imaging Development

Associated Particle Imaging Development

Pipe Crawler Internal Piping Characterization System

Pipe Crawler Internal Piping Characterization System

Pipe Crawler Internal Piping Characterization System

Pipe Crawler Internal Piping Characterization System

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## Technology Needs

**Site Need Code:** SR99-4006

**Site Need Name:** Asbestos Treatment to Allow Reuse

**Focus Area Work Package ID:** DD-10

**Focus Area Work Package:** Production Reactor D&D

**Focus Area:** DDFA

**Agree with Technology Link:** N

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

In Situ Chemical Treatment of Asbestos

In Situ Chemical Treatment of Asbestos

In Situ Chemical Treatment of Asbestos

In Situ Chemical Treatment of Asbestos

Thermal Conversion of Asbestos

Thermal Conversion of Asbestos

Thermal Conversion of Asbestos

Thermal Conversion of Asbestos

Strippable Coatings and Fixatives

Strippable Coatings and Fixatives

Strippable Coatings and Fixatives

Strippable Coatings and Fixatives

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## Technology Needs

**Site Need Code:** SR99-4007

**Site Need Name:** Characterization of Volumetrically Contaminated Surfaces

**Focus Area Work Package ID:** DD-01

**Focus Area Work Package:** D&D of Tritium Contaminated Facilities

**Focus Area:** DDFA

**Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Remote Concrete Coring

Remote Concrete Coring

Remote Concrete Coring

Remote Concrete Coring

**Site Need Code:** SR99-4008

**Site Need Name:** Dismantlement of Concrete-Encased Piping

**Focus Area Work Package ID:** DD-11

**Focus Area Work Package:** Deactivation of 321-M Fuel Fabrication Facility

**Focus Area:** DDFA

**Agree with Technology Link:** N

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Oxy-Gasoline Torch

Oxy-Gasoline Torch

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## Technology Needs

Oxy-Gasoline Torch

Remote Control Concrete Demolition System

Remote Control Concrete Demolition System

Remote Control Concrete Demolition System

Liquid-Nitrogen Cooled Diamond-Wire Concrete Cutting

Liquid-Nitrogen Cooled Diamond-Wire Concrete Cutting

Liquid-Nitrogen Cooled Diamond-Wire Concrete Cutting

Track Mounted Shear/Crusher

Track Mounted Shear/Crusher

Track Mounted Shear/Crusher

### Related CCP Milestones

### Related Waste Streams

### Agree?

### Change?

00522: LAC - Low Activity Bulk Waste

Y

N

02184: AA - LLW Soil, Rubble, Debris

Y

N

00528: LAE - Incinerable Low Activity Job Control Waste

Y

N

00574: TAL - TRU Waste Segregated and Repackaged for WIPP Disposal

Y

N

Site Need Code: **SR99-4009**

Site Need Name: **Improved Exhaust Treatment Systems**

Focus Area Work Package ID: **DD-11**

Focus Area Work Package: **Deactivation of 321-M Fuel Fabrication Facility**

Focus Area: **DDFA**

Agree with Technology Link: **N**

Benefits (Cost, Risk Reduction, Both): **Cost**

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

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## Technology Needs

### Related CCP Milestones

### Related Waste Streams

### Agree?

### Change?

00528: LAE - Incinerable Low Activity Job Control Waste

Y

N

00578: TAP - Drums Segregated and Repackaged for WIPP Disposal

Y

N

Site Need Code: SR99-4010

Site Need Name: Characterization Data Management

Focus Area Work Package ID: DD-10

Focus Area Work Package: Production Reactor D&D

Focus Area: DDFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Rapid Surface Sampling and Archive Record (RSSAR) System

Rapid Surface Sampling and Archive Record (RSSAR) System

Rapid Surface Sampling and Archive Record (RSSAR) System

Three Dimensional, Integrated Characterization and Archiving System (3D-ICAS)

Three Dimensional, Integrated Characterization and Archiving System (3D-ICAS)

Three Dimensional, Integrated Characterization and Archiving System (3D-ICAS)

Mobile Automated Characterization System

Mobile Automated Characterization System

Mobile Automated Characterization System

Gamma Cam (TM) Radiation Imaging System

Gamma Cam (TM) Radiation Imaging System

Gamma Cam (TM) Radiation Imaging System

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

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## Technology Needs

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

Indoor Radiation Mapping Using Laser Assisted Ranging and Data System

System for Tracking Remediation, Exposure, Activities and Materials (STREAM)

System for Tracking Remediation, Exposure, Activities and Materials (STREAM)

System for Tracking Remediation, Exposure, Activities and Materials (STREAM)

**Site Need Code:** SR99-4011

**Site Need Name:** Waste Characterization

**Focus Area Work Package ID:** DD-03

**Focus Area Work Package:** Canyon Disposition Initiative

**Focus Area:** DDFA

**Agree with Technology Link:** N

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Portable X-Ray, K-Edge Heavy Metal Detector

Waste Inspection Tomography (WIT)

Waste Inspection Tomography (WIT)

Waste Inspection Tomography (WIT)

Characterization Development

Characterization Development

Characterization Development

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## Technology Needs

Associated Particle Imaging Development

Associated Particle Imaging Development

Associated Particle Imaging Development

WIPP Certifiable TRU Standard Waste Box Counter

WIPP Certifiable TRU Standard Waste Box Counter

WIPP Certifiable TRU Standard Waste Box Counter

**Site Need Code:** SR99-4012

**Site Need Name:** Stabilization of Contaminated Equipment / Components/ Surfaces

**Focus Area Work Package ID:** DD-10

**Focus Area Work Package:** Production Reactor D&D

**Focus Area:** DDFA

**Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Reactor Surface Contamination Stabilization

Reactor Surface Contamination Stabilization

Reactor Surface Contamination Stabilization

Strippable Coatings and Fixatives

Strippable Coatings and Fixatives

Strippable Coatings and Fixatives

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## Technology Needs

**Site Need Code:** SR99-4013

**Site Need Name:** Containment / Confinement Technologies

**Focus Area Work Package ID:** DD-03

**Focus Area Work Package:** Canyon Disposition Initiative

**Focus Area:** DDFA

**Agree with Technology Link:** N

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

**Site Need Code:** SR99-4015

**Site Need Name:** Decontamination of Small Components

**Focus Area Work Package ID:** DD-11

**Focus Area Work Package:** Deactivation of 321-M Fuel Fabrication Facility

**Focus Area:** DDFA

**Agree with Technology Link:** N

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

CORPEX Nuclear Decontamination Process

CORPEX Nuclear Decontamination Process

CORPEX Nuclear Decontamination Process

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT

Steam Vacuum Cleaning

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## Technology Needs

Steam Vacuum Cleaning

Steam Vacuum Cleaning

Soft Media Blast Cleaning

Soft Media Blast Cleaning

Soft Media Blast Cleaning

### Related CCP Milestones

### Related Waste Streams

### Agree?

### Change?

00583: -

Y

N

00528: LAE - Incinerable Low Activity Job Control Waste

Y

N

00574: TAL - TRU Waste Segregated and Repackaged for WIPP Disposal

Y

N

00530: LAF - Bulk Metal for Survey/Decon

Y

N

**Site Need Code:** SR99-4016

**Site Need Name:** Health and Safety Technologies

**Focus Area Work Package ID:** DD-10

**Focus Area Work Package:** Production Reactor D&D

**Focus Area:** DDFA

**Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Cost

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Advanced Worker Protection System

Advanced Worker Protection System

Advanced Worker Protection System

Personal Ice Cooling System (PICS)

Personal Ice Cooling System (PICS)

Personal Ice Cooling System (PICS)

Heat Stress Monitoring System

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## Technology Needs

Heat Stress Monitoring System

Heat Stress Monitoring System

Wireless Remote Monitoring System

Wireless Remote Monitoring System

Wireless Remote Monitoring System

Heat Stress Mitigation

Heat Stress Mitigation

Heat Stress Mitigation

## Technology Deployments

		Deployment Year		
<u>Deployment Status</u>		<u>Planned</u>	<u>Forecast</u>	<u>Actual Date</u>
<b>Technology Name:</b>	Laser Surface Cleaning			
Potential Deployment		2005		
<b>Technology Name:</b>	Small Pipe Characterization System (SPCS)			
Potential Deployment		2005		
<b>Technology Name:</b>	In Situ Chemical Treatment of Asbestos			
Potential Deployment		2005		
<b>Technology Name:</b>	Airborne Laser Induced Fluorescence Imaging			
Potential Deployment		2005		
<b>Technology Name:</b>	Three Dimensional, Integrated Characterization and Archiving System (3D-ICAS)			
Potential Deployment		2005		

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HQ ID: **0501**

## Technology Deployments

		Deployment Year		
<u>Deployment Status</u>		<u>Planned</u>	<u>Forecast</u>	<u>Actual Date</u>
<b>Technology Name:</b>	Portable X-Ray, K-Edge Heavy Metal Detector			
Potential Deployment		2005		
<b>Technology Name:</b>	Thermal Conversion of Asbestos			
Potential Deployment		2005		
<b>Technology Name:</b>	Removal of Contaminants from Equipment and Debris, and Waste Minimization Using TECHXTRACT			
Potential Deployment		2005		
<b>Technology Name:</b>	2-D Linear Motion System			
Potential Deployment		2005		
<b>Technology Name:</b>	Portable X-Ray Fluorescence Spectrometer			
Potential Deployment		2005		
<b>Technology Name:</b>	Mobile Automated Characterization System			
Potential Deployment		2005		
<b>Technology Name:</b>	Pipe Crawler Internal Piping Characterization System			
Potential Deployment		2005		
<b>Technology Name:</b>	Surface Contamination Monitor and Survey Information Management System (SCM/SIMS)			
Potential Deployment		2005		
<b>Technology Name:</b>	Pegasus Coating Removal			
Potential Deployment		2005		

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## Technology Deployments

		Deployment Year		
<u>Deployment Status</u>		<u>Planned</u>	<u>Forecast</u>	<u>Actual Date</u>
<b>Technology Name:</b>	Indoor Radiation Mapping Using Laser Assisted Ranging and Data System			
Potential Deployment		2005		
<b>Technology Name:</b>	Ground Based Laser Induced Fluorescence Imaging			
Potential Deployment		2005		
<b>Technology Name:</b>	Diamond wire cutting			
Potential Deployment		2005		
<b>Technology Name:</b>	Reducing grout			
Potential Deployment		2005		